**IN THE UNITED STATES DISTRICT COURT**
**FOR THE WESTERN DISTRICT OF TEXAS**
**AUSTIN DIVISION**

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| BIG WILL ENTERPRISES INC.<br><br>Plaintiff,<br><br>v.<br><br>KNIGHT-SWIFT TRANSPORTATION HOLDINGS INC.<br><br>Defendant. | Civil Action File No.: 1:25-cv-00941<br><br>**JURY TRIAL DEMANDED** |

**COMPLAINT FOR PATENT INFRINGEMENT**

Plaintiff Big Will Enterprises Inc. ("BWE" or the "Plaintiff") in British Columbia, by and through their undersigned attorneys, files this original Complaint against Knight-Swift Transportation Holdings Inc. ("Knight-Swift" or "Defendant") and alleges, based on its own knowledge with respect to itself and its own actions and based on information and belief as to all other matters, as follows:

**INTRODUCTION**

**1.**

This is an action for patent infringement arising under the patent laws of the United States, Title 35, United States Code to enjoin infringement and obtain damages from Defendant's unauthorized manufacture, use, sale, offer to sell, and/or importation into the United States for the subsequent use or sale of products or methods that infringe one or more claims of United States Patents: 10,521,846; 9,049,558; 8,737,951; 8,559,914; and 8,452,273.

**2.**

BWE is an innovative company in the field of sensor technology for determining human activities for health, safety and other uses. BWE's sensor-based technologies go beyond determining simple human locations and offer smartphone users (and other communication-based devices) a personal surveillance system based on their activities. The technologies monitor sensors such as the accelerometer, the gyroscope and others for uniquely identifying human activities; the motion activities can include, for example, but not limited to, standing/stationary, walking, running, driving, skiing, sleeping, snoring, hiking, skateboarding, sky diving, bicycling, unicycling, golfing, falling down, swimming, riding a ski lift, a motor vehicle, a motorcycle, an airplane, a train, or a water vessel, accelerating or decelerating in a motor vehicle, motorcycle, train, airplane, or water vessel, vibrating, propagating through a medium, rotating, riding in a wheelchair, and other human movements, where capturing data and/or providing feedback is desired. BWE has created proprietary technologies in this field of technology since at least 2007 for, among other benefits, the increased health, safety, and wellbeing of its users. BWE's patented technology was developed for use on a wide variety of devices, including smartphones, smartwatches, and other communication and sensor-based devices in use on many popular products in the market today. In addition to licensing, BWE has incorporated its patented technology in its own test platforms for determining human activities, motions within activities, accidents and falls, among others.

**3.**

A primary inventive concept is method by which a particular human movement can be identified, when the sensors, in this case, those in a mobile phone, have no fixed orientation with respect to the human. A smart phone may be ina user's pocket, purse or backpack, for example

and in no particular orientation. U.S. 8,452,273 cols. 1-3. Prior to the ’273 Patent, there was no effective answer for this problem. BWE’s sensor monitoring, processing and communication technology is covered by the claims of the ’846, ’558, ’951, ’914, and the ’273 Patents asserted in this action, as well as other BWE patents.

## JURISDICTION AND VENUE

**4.**

BWE is a British Columbia company, incorporated in Canada having its principal place of business at 4573 West 1st Avenue, Vancouver, British Columbia V6R 1H7, Canada.

**5.**

Upon information and belief, Defendant Knight-Swift Transportation Holdings Inc. is a corporation organized under the laws of Delaware, having its headquarters at 20002 North 19th Avenue, Phoenix, Arizona 85027. Knight-Swift Transportation Holdings Inc. may be served this Complaint by service upon its registered agent National Registered Agents, Inc. at 160 Greentree Drive Suite 101, Dover, Kent, Delaware, 19904

**6.**

This is an action for infringement of a United States patent arising under 35 U.S.C. §§ 271, 281, and 284-285, among others. This Court has subject matter jurisdiction over all causes of action set forth herein pursuant to 28 U.S.C. §§ 1331 and 1338(a) because this action arises under the patent laws of the United States, 35 U.S.C. §§ 1 *et seq.*

**7.**

Venue is proper in this judicial district and division pursuant to 28 U.S.C. §§1391(b) and (c) and 1400(b) in that, upon information and belief, Defendant operates a corporate terminal Location located at 1101 Southview Drive, El Paso Texas, 79928. Defendant routinely does

business within this district, Defendant has committed acts of infringement within this district, and Defendant continues to commit acts of infringement within this district.

**8.**

On information and belief, Defendant actively uses infringing telematics systems including fleet management platforms, Eleos driver workflow applications, and dash camera solutions from multiple vendors within in this State and District. Defendant also provides an online presence under the name knigh-swift.com which is available to customers and prospective customers within this State and District. As a result of Defendant's business activities in this State and District, on information and belief, Defendant has had continuous and systematic contacts with this State and District.

**9.**

Upon information and belief, Defendant is subject to this Court's specific and general personal jurisdiction pursuant to due process and/or the Texas Long Arm Statute, due at least to Defendant's substantial business in this State and judicial district, including: (i) at least a portion of the infringements alleged herein; and/or (ii) regularly doing or soliciting business, engaging in other persistent courses of conduct, and/or deriving substantial revenue from services provided to individuals in Texas and in this district.

## ALLEGATIONS COMMON TO ALL COUNTS

**10.**

Plaintiff ("BWE") owns all right, title, interest in, and has standing to sue for infringement the following patents: United States Patent No. 10,521,846 ("the '846 Patent"), entitled "Targeted advertisement selection for a wireless communication device (WCD)," issued on December 31, 2019; United States Patent No. 9,049,558 ("the '558 Patent"), entitled "Systems and methods for determining mobile thing motion activity (MTMA) using sensor data of wireless communication

device (WCD) and initiating activity-based actions," issued on June 02, 2015; United States Patent No. 8,737,951 ("the '951 Patent"), entitled "Interactive personal surveillance and security (IPSS) systems and methods," issued on May 27, 2014; United States Patent No. 8,559,914 ("the '914 Patent") entitled "Interactive personal surveillance and security (IPSS) systems and methods," issued on October 15, 2013; and United States Patent No. 8,452,273 ("the '273 Patent"), entitled "Systems and methods for determining mobile thing motion activity (MTMA) using accelerometer of wireless communication device," issued May 28, 2013. Copies of the '846 Patent, the '558 Patent, the '951 Patent, the '914 Patent and the '273 Patent are attached as Exhibits 1-5.

**11.**

BWE is a global leader and innovator in the field of sensor technology for determining human activities for health, safety and other uses. These proprietary technologies and innovations were being developed since 2007 for the increased health, safety and wellbeing of its users. BWE patented technology was developed for use on a wide variety of devices, including smartphones and wearables and are in use on many popular products in the market today. In addition to licensing, BWE has incorporated its patented technology in its own test platforms for determining human activities, motions within activities, accidents and falls, among others.

**12.**

BWE's sensor based technologies go beyond determining human locations by uniquely identifying human activities for automatically monitoring and tracking movements, such as sleep, stationary, walking, running, cycling, falling down, rotating and other human movements where capturing data and/or providing feedback is desired.

**13.**

BWE’s sensor monitoring, processing and communication technologies are covered by the claims of the ’846 Patent, ’558 Patent, the ’951 Patent, the ’914 Patent and the ’273 Patents which are asserted in this action, as well as other BWE patents.

**14.**

Defendant is the industry's largest full truckload company; operating with an extensive fleet of roughly 19,000 tractors, 58,000 trailers, and employing 24,000 people. Defendants serve a wide range of customers in a broad array of industries, providing a full complement of truckload and logistics services throughout the United States and Texas. Defendant has made significant investments in, and is actively utilizing, telematics systems including fleet management platforms, Eleos driver workflow applications, and dash camera solutions from multiple vendors. These systems are designed to enhance safety, improve efficiency, and reduce operational costs, while also performing driver behavior monitoring functions such as detecting hard braking, rapid acceleration, sharp turns, and collisions.

**15.**

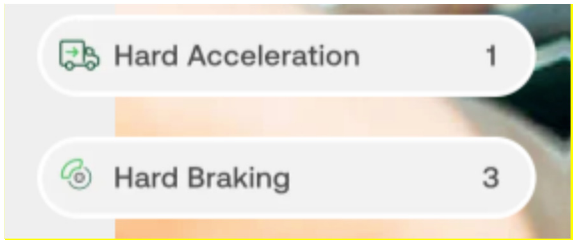
The behavior-tracking features of these telematics-equipped devices—whether factory-installed or retrofitted—rely on embedded motion sensors and automated event-tagging mechanisms. They utilize accelerometer data and event-detection algorithms that infringe BWE’s patented technologies. Furthermore, these platforms deliver real-time alerts, enable incident reconstructions, and provide driver coaching tools—key functionalities also protected under BWE’s intellectual property. The integration of GPS, accelerometers, and gyroscope sensors for driving-pattern analysis and unsafe behavior detection infringes BWE’s patented solutions for motion-based behavior classification.

**16.**

In particular, Knight-Swift's telematics-equipped dash cameras— specifically the Netradyne Driveri D-450 and D-215 models—are designed to detect and analyze high-risk driving behaviors. These systems receive simultaneous data streams from integrated three-axis accelerometers and/or gyroscopes, capturing precise motion data in real time. Each time-stamped data sample reflects a specific moment during vehicle operation, enabling the system to monitor and assess motion characteristics such as hard braking, rapid acceleration, and collision events. This continuous analysis supports real-time safety evaluations, event documentation, and enhanced driver performance transparency.

**17.**

The Netradyne Driveri D-450 and D-215 models include as key features detection of hard Braking and rapid acceleration. The system utilizes inertial sensors to detect sudden changes in speed, identifying events such as hard braking and rapid acceleration.





According to Netradyne, other dash cam systems only capture a small percentage of a driver's drive time. With Driveri, managers have access to the entire driving day. This gives managers deeper insight into driver behavior so they can make data-driven decisions on improving safety. https://www.netradyne.com/blog/how-to-drive-smarter-with-netradynesdriveri-ai-smart-dash-cam.

**18.**

The Netradyne Driveri dash cameras provide driver performance reporting, customized reporting, and live in-cab coaching.


https://www.netradyne.com/blog/how-to-installdriveri-dash-cam-the-ultimate-guide.


https://techcrunch.com/2025/01/17/netradynesnags-90m-at-1-25b-valuation-to-expand-smartdashcams-for-commercial-fleets/.

- **Driver Performance Reporting** – alerts you to harsh braking, harsh acceleration, over-revving, exceeding defined speed limits, driving at times of elevated risk, and entering or leaving defined areas
- **Customised Reporting** – allows you to design your own reports or choose from dozens on the menu, all of which can be pushed to you automatically on a recurring or event-triggered basis


https://www.netradyne.com/blog/how-to-installdriveri-dash-cam-the-ultimate-guide.

LIVE IN-CAB COACHING

Correct risky and reinforce great driving in real time with audio coaching.

> This allows drivers and managers to have better relationships, all while promoting a safety culture at work. In addition to providing visibility into a driver's performance, Driveri also motivates drivers and helps them succeed on their terms. Drivers can review the recorded footage and undergo necessary training (with or without the manager's presence) to improve their driving. Moreover, the system rewards positive driving behavior through gamification programs to engage drivers and enhance retention. [https://www.netradyne.com/blog/how-to-drive-smarterwith-netradynes-driveri-ai-smart-dash-cam?.]

**COUNT I**

**DIRECT INFRINGEMENT OF THE ’846 PATENT**

**19.**

Plaintiff incorporates by reference the allegations of Paragraphs 1-18.

**20.**

Defendant has directly infringed and continues to directly infringe at least one or more claims of the ’846 Patent, through, among other activities, using applications automatic programs for monitoring human activities while driving. On information and belief, Defendant’s applications are provided, at least in part, as a dash-cam-deployed driver-behavior monitoring and reporting solution.

**21.**

Independent Claim 1 of the ’846 Patent, shown in italics, recites:

> *1. A method for use in connection with a wireless communication device (WCD) transported by a mobile thing (MT), the WCD having a computer architecture that has access to a memory, comprising: determining a mobile thing motion activity (MTMA) associated with the MT that is transporting the WCD based at least in part upon sensor data, the sensor data derived from one or more sensors associated with the WCD,*

The Knight-Swift telematics-equipped dash cameras are wireless communication-enabled devices, such as in-cab devices, that are transported by vehicles and include computing architectures with

memory and processing capabilities. These devices function as mobile computing platforms within fleet trucks, enabling accelerometer sensor-based behavior detection and data transmission.

> *the one or more sensors measuring physical movement of the WCD in three dimensional space and producing data sets comprising three movement values and a time value, each of the three movement values indicative of physical movement of the WCD relative to a respective axis in a three dimensional (3D) coordinate system at the time value in order to permit statistical analysis of the physical movement;*

The Knight-Swift telematics-equipped dash cameras for determining driver behaviors include sensors—primarily three-axis accelerometers and, in some cases, gyroscopes—that measure physical movement of the wireless communication device in real time across three dimensions. These sensors generate time-stamped data sets, where each data point includes acceleration values for the *x*, *y*, and *z* axes at a specific time. This structure enables the system to track motion across a 3D coordinate framework and to conduct statistical analysis of the data, including evaluating the intensity, direction, and timing of movement. The captured sensor data supports identification of driver behaviors such as hard braking and rapid acceleration, and impact events based on the motion signatures present within the time-indexed axis data.

> *selecting an advertisement based at least in part upon the determined MTMA; causing the advertisement to be communicated to the WCD; and*

The Knight-Swift telematics system is designed to promote safer driving and improve driver proficiency through real-time monitoring of motion activities detected via accelerometer-based behavior analysis. When specific motion patterns —such as harsh braking, sharp turning, or consistent safe driving—are identified, the system may use targeted messaging and driver-centric advertisements. These communications are delivered directly to the in-cab wireless communication device, encouraging behavior improvement and promoting relevant services or incentives based on the driver's motion activity. This process reflects the selection and delivery of content based at least in part on the determined motion activity.

> *wherein the determining the MTMA comprises: storing a plurality of reference MTMA signatures in the memory, each of the MTMA signatures including frequency and/or time information associated with sensor data pertaining to a specific MTMA;*

The Knight-Swift telematics system stores multiple reference patterns—or signatures—corresponding to different motion activities in memory. Each of these signatures contains characteristic accelerometer data, including time and frequency-based information that reflects specific behaviors such as hard braking and rapid acceleration, or rapid acceleration. These reference signatures are used to compare against live sensor inputs to determine whether the detected motion matches known activity types. Accurate interpretation of these signatures depends on properly normalized accelerometer data, including adjustments for gravity across the *x*, *y*, and *z* axes. Gravity may also be used to help orient the 3D coordinate system by establishing vertical (*z*) and horizontal (*x* and *y*) axes, enabling separate and accurate frequency and time-domain analysis of vertical and horizontal accelerations.

> *determining a normalizing mathematical relationship so that different data sets separated in time can be analyzed in the 3D coordinate system; using the normalizing mathematical relationship, determining normalized data sets; analyzing the normalized data sets in the frequency and time domains;*

The Knight-Swift telematics system processes raw accelerometer data that includes gravitational acceleration, which must be mathematically normalized to ensure accurate motion analysis. This normalization process removes gravitational bias and aligns motion data within a consistent three-dimensional (3D) coordinate system over time. Gravity is often used to help determine the vertical (*z*-axis) orientation of the device, which then supports establishing the correct horizontal plane (*x* and *y* axes). Once the normalizing relationship is determined, live data sets can be transformed into standardized data sets aligned to the proper axes. These normalized data sets are then analyzed in both the time domain—such as duration and rate of change—and the frequency domain—such

as intensity or vibration patterns—allowing for precise identification and classification of driving behaviors over time.

> *determining likelihoods associated with the stored MTMA signatures based at least in part upon the analyzing; and selecting a most likely MTMA signature from the plurality of MTMA signatures based at least in part upon the likelihoods.*

The Knight-Swift telematics system analyzes normalized accelerometer data against a library of stored motion activity signatures and evaluates the degree of correlation between the live data and each reference pattern. This evaluation includes matching both time-based and frequency-based characteristics of the motion data. Based on predefined thresholds and correlation scoring, the system assigns likelihood values to each potential match. The motion activity associated with the highest likelihood is selected as the most accurate representation of the current driving behavior. This approach enables efficient and reliable classification of driver actions using statistically ranked comparisons across the system's stored motion activity profiles.

**22.**

Claim 2 of the '846 Patent, for example, recites:

> *2. The method of claim 1, wherein the advertisement is communicated to the WCD via an email or text message.*

Knight-Swift's servers and systems monitor driver behavior and uses advertisement notifications and or reward messages so participants are automatically enrolled to receive in app messages, text messages and/or summary emails.

**23.**

Claim 3 of the '846 Patent, for example, recites:

> *3. The method of claim 1, further comprising determining an identification (ID) of the MT and wherein the selecting the advertisement is further based at least in part upon the determined ID in addition to the determined MTMA.*

Knight-Swift's servers and systems monitor driver behavior and receives advertisements promoting driving score, and or points, and or standings. This allows the server to message directly to the app, user-based on updated advertisements.

**24.**

Claim 4 of the '846 Patent, for example, recites:

> *4. The method of claim 1, further comprising determining a location of the WCD and wherein the selecting the advertisement is further based at least in part upon the location in addition to the determined MTMA.*

Knight-Swift's servers and systems to monitor driver behavior determine a location that violations occur (also when drivers finish and or start routes). Notifications and updated screens that show route and location violations, and driver scores are updated and provided to the app user and the servers.

**25.**

Claim 5 of the '846 Patent, for example, recites:

> *5. The method of claim 1, further comprising receiving a payment for or otherwise monetarily benefiting from causing the advertisement to be communicated.*

Knight-Swift's servers and systems monitor driver behavior and promotes driver scores and awards to (ranking) drivers and improve driver behaviors.

**26.**

Claim 6 of the '846 Patent, for example, recites:

> *6. The method of claim 1, wherein the causing comprises enabling an advertiser to communicate the advertisement to the WCD by advising a remote computer system associated with the advertiser of the MTMA.*

Knight-Swift's servers and systems monitor driver behavior and uses the driver's risky behavior to send predefined advertisements from a remote computer system that may be re-configured from time to time.

**27.**

Claim 7 of the ’846 Patent, for example, recites:

> *7. The method of claim 1, further comprising enabling a user of the WCD to enable and disable the causing of the advertisement.*

Knight-Swift’s systems allows users to get notifications and messages sent to their phones and email addresses or opt out/disable.

**28.**

Claim 8 of the ’846 Patent, for example, recites:

> *8. The method of claim 1, wherein the sensor data is derived from an accelerometer, a gyroscope, or both.*

Knight-Swift's servers and systems monitor driver behavior using sensor data from the accelerometer and/or the gyroscope.

**29.**

Claim 9 of the ’846 Patent, for example, recites:

> *9. The method of claim 1, wherein the steps are performed in the WCD itself or in one or more communicatively coupled computer systems that are remote from the WCD and that receive the sensor data from the WCD.*

Knight-Swift's servers and systems monitor driver behavior from the internal sensors and also uses servers to make certain decisions that enhance the accuracy of smartphone data. For example, the driver score is calculated based on at least in part the sensor data that determines violations such as unsafe driving, hard braking, and unnecessary acceleration.

**30.**

Claim 10 of the ’846 Patent, for example, recites:

> *10. The method of claim 1, wherein the WCD is communicatively coupled to a remote computer system and wherein the memory is associated with the remote computer system.*

Knight-Swift's servers and systems monitor driver behavior and use the sensors and servers to make certain decisions that are remote from the users/devices.

**31.**

Independent Claim 12 of the ’846 Patent, shown in italics, recites:

> *12. A wireless communication device (WCD) transported by a mobile thing (MT), comprising: one or more transceivers designed to enable access to a remote computer system, the remote computer system designed to select a targeted advertisement and enable the advertisement to be communicated or accessed by the WCD;*

The Knight-Swift telematics-equipped dash cameras for determining driver behaviors include wireless communication devices that are integrated into fleet vehicles and equipped with one or more transceivers for accessing remote computer systems. These systems collect and analyze data—such as accelerometer-based *x*, *y*, and *z*-axis motion readings—to identify driving behaviors with precision. The remote infrastructure processes this data to generate behavior profiles and deliver targeted content, alerts, or driver-specific advertisements back to the in-cab device. Unlike traditional GPS-only tracking systems, Knight-Swift’s solution supports advanced identification of risky driving behaviors such as harsh acceleration, braking, or sharp turning, and uses this information as the basis for communicating performance-related content to the driver.

> *one or more sensors associated with the WCD designed to produce sensor data, the sensor data indicative of physical movement of the WCD in three dimensional space and including data sets comprising three movement values and a time value, each of the three movement values indicative of physical movement of the WCD relative to a respective axis in a three dimensional (3D) coordinate system at the time value in order to permit statistical analysis of the physical movement;*

The Knight-Swift tracking system monitors driver behaviors using motion sensors such as three-axis accelerometers and, in some cases, three-axis gyroscopes, which are integrated into the wireless communication device (WCD) installed in each vehicle. These sensors capture real-time motion data across three dimensions (*x*, *y*, and *z*), representing acceleration and orientation changes

associated with driver actions such as harsh braking, rapid acceleration, and turning. Each set of movement values is associated with a specific time value, enabling the system to perform statistical analysis over time. This structure allows Knight-Swift to evaluate the intensity, direction, and duration of vehicle movements, forming the basis for identifying and classifying driver behaviors.

> *one or more memories designed to store computer program code; and one or more processors designed to execute the computer program code, the computer program code comprising: code designed to determine mobile thing motion activity (MTMA) of the MT that is transporting the WCD based at least in part upon the sensor data and the statistical analysis of the physical movement of the WCD;*

The Knight-Swift telematics-equipped dash cameras and systems include internal memory for storing the program code and processors for executing it in real time. This software application code analyzes sensor data—such as accelerometer and gyroscope inputs—collected during vehicle operation. Using statistical methods applied to movement data, the system determines the motion activity of the vehicle, including behaviors such as general driving, harsh braking, or aggressive acceleration. The identification of mobile thing motion activity (MTMA) is based at least in part on this processed sensor data and its time-based statistical analysis, enabling accurate behavior profiling while the vehicle is in motion.

> *code designed to communicate the sensor data or a mobile thing motion activity (MTMA) of the MT that is transporting the WCD and that is derived from the sensor data via the one or more transceivers to the remote computer system in order to enable selection of the targeted advertisement that is suited for the determined MTMA; code designed to receive and locally communicate the advertisement to a user interface of the WCD; and*

The Knight-Swift telematics system is designed to promote safer driving and improve driver proficiency through real-time monitoring of motion activities detected via accelerometer-based behavior analysis. When specific motion patterns —such as harsh braking, sharp turning, or consistent safe driving—are identified, the system may use targeted messaging and driver-centric advertisements. These communications are delivered directly to the in-cab wireless

communication device, encouraging behavior improvement and promoting relevant services or incentives based on the driver's motion activity. This process reflects the selection and delivery of content based at least in part on the determined motion activity.

> *wherein the code designed to determine the MTMA comprises: code designed to store a plurality of reference MTMA signatures in the memory, each of the MTMA signatures including frequency and/or time information associated with sensor data pertaining to a specific MTMA; code designed to determine a normalizing mathematical relationship so that different data sets separated in time can be analyzed in the 3D coordinate system;*

The Knight-Swift telematics application code normalizes the live data into sets of data that may be measured in the frequency and time domains and allows the live 3D (three or more axes from the accelerometer and/or gyroscope) data to be compared to the reference data. Code is used to determine time separations so the raw data so it may be analyzed in a 3D coordinate system.

> *code designed to, using the normalizing mathematical relationship, determine normalized data sets; code designed to analyze the normalized data sets in the frequency and time domains;*

The Knight-Swift tracking system uses code that applies a normalization process to raw accelerometer and gyroscope data in order to remove gravitational influences and align sensor inputs to a consistent 3D coordinate system. This normalization allows the system to generate clean, time-stamped data sets that represent movement across the *x*, *y*, and *z* axes with precision. Once normalized, the code enables analysis of these data sets in both the frequency domain—such as identifying the intensity or periodicity of motion—and the time domain—such as detecting acceleration duration or suddenness. This dual-domain analysis allows real-time motion activity to be reliably compared to reference data for accurate behavior identification.

> *code designed to determine likelihoods associated with the stored MTMA signatures based at least in part upon the analyzing; and code designed to select a most likely MTMA signature from the plurality of MTMA signatures based at least in part upon the likelihoods.*

The Knight-Swift tracking system includes code that analyzes normalized sensor data in both the frequency and time domains to evaluate how closely the current motion data matches stored reference motion activity signatures. The system determines likelihood scores based on how well the live data correlates to each stored reference profile. These profiles represent known driving behaviors such as harsh braking, aggressive acceleration, or smooth driving. Based on the calculated likelihoods, the system selects the most probable motion activity signature from the stored set, ensuring accurate classification of the driver's behavior in real time.

**32.**

Claim 13 of the '846 Patent, for example, recites:

> *13. The WCD of claim 12, wherein the program code further comprises code to determine an identification (ID) associated with the MT and wherein the code to select the advertisement makes the selection based at least in part upon the determined ID of the user.*

The Knight-Swift servers and systems monitor individual driver behaviors, and provides scoring, coaching, and details to each driver. The system also uses a smartphone unique identifier to connect and send messages from the server to a driver's device.

**33.**

Claim 14 of the '846 Patent, for example, recites:

> *14. The WCD of claim 12, wherein the program code further comprises code to determine a location of the WCD and wherein the code to select the advertisement makes the selection based at least in part upon the location.*

Knight-Swift servers and systems monitor driver behavior and determines the users location within the device and provides advertisements to the user when the user engages unsafe driving, finishes an activity (end of route), or when the user starts a new route.

**34.**

Claim 15 of the '846 Patent, for example, recites:

> *15. The WCD of claim 12, wherein the sensor data is derived from an accelerometer, a gyroscope, or both.*

Knight-Swift servers and systems determine rapid acceleration, hard braking and others driving events through the accelerations from the accelerometer and/or gyroscope.

**35.**

Claim 16 of the ’846 Patent, for example, recites:

> *16. The system of claim 12, wherein the computer program code further comprises: code to determine a mathematical relationship between different data sets to enable analysis of the different data sets in the 3D coordinate system; and code to determine the MTMA based at least in part upon the analysis of the different data sets in the 3D coordinate system.*

Knight-Swift servers and systems monitor driver behavior by determining a mathematical relationship between reference *x*, *y* and *z* data and different *x*, *y* and *z* data sets coming from the accelerometer and or gyroscope in the 3D coordinate system. Multiple data sets matching an activity over a time period is needed to confirm most activities before it is logged.

**COUNT II**

**DIRECT INFRINGEMENT OF THE ’558 PATENT**

**36.**

Plaintiff incorporates by reference the allegations of Paragraphs 1-18.

**37.**

Defendant has directly infringed and continues to directly infringe at least one or more claims of the ’558 Patent, through, among other activities, using applications automatic programs for monitoring human activities while driving. On information and belief, Defendant’s applications are provided, at least in part, as a dash-cam-deployed driver-behavior monitoring and reporting solution.

**38.**

Independent Claim 1 of the '558 Patent, shown in italics, recites:

> *1. A method, comprising: receiving a time value and at least three streams of data sample values from one or more sensors of a wireless communication device (WCD) that is transported by a mobile thing (MT), each data sample value indicative of movement of the WCD at a corresponding time value;*

Knight-Swift's telematics-equipped dash cameras—specifically the Driveri D-450 and D-215 models—are designed to detect and analyze high-risk driving behaviors. These systems receive simultaneous data streams from integrated three-axis accelerometers and/or gyroscopes, capturing precise motion data in real time. Each time-stamped data sample reflects a specific moment during vehicle operation, enabling the system to monitor and assess motion characteristics such as hard braking, rapid acceleration, and collision events. This continuous analysis supports real-time safety evaluations, event documentation, and enhanced driver performance transparency.

> *recognizing a particular set of data sample values as a reference for defining an orientation of the WCD in a coordinate system;*

To establish device orientation, Knight-Swift's telematics-equipped dash cameras analyze accelerometer outputs and identify reference data patterns, such as stationary periods or constant gravitational force readings, used to define the sensor's position within a coordinate framework. This orientation calibration enables the system to contextualize incoming motion data based on the vehicle's angle, slope, or tilt. As gravitational forces influence sensor readings during uphill, downhill, or angled travel, Knight-Swift's system compensates for these forces when interpreting accelerations along the *x*, *y*, and *z* axes. This compensation ensures that true vehicle dynamics (e.g., actual braking or acceleration forces) are accurately isolated from gravitational interference, enabling precise motion detection and event classification.

> *computing reference data based upon the recognition of the particular set, the reference data defining a relationship between each set of subsequent*

> *non-reference data sample values and the particular reference set of data sample values in the coordinate system;*

Once orientation is established, Knight-Swift's telematics-equipped dash cameras compute reference data structures that relate future incoming sensor readings to the baseline frame. These structured data formats allow the system to compare deviations from the reference state and interpret driver motion accurately. In some cases, this may involve calculating whether current acceleration values differ significantly from gravity-based reference values, which supports the event detection logic. The reference data is determined by whether or not gravitational accelerations ($g \approx 9.81\ m/s^2$) are included in the sensor data. By accounting for gravitational influence, the system can accurately distinguish between true vehicle movements and gravity-induced sensor variations, ensuring reliable event classification.

> *calculating movement data in the coordinate system of one or more other non-reference data sample values based upon the reference data; and*

Knight-Swift's telematics-equipped dash cameras continuously compute dynamic movement vectors from raw accelerometer readings, aligned to the previously established reference frame. These calculations enable real-time recognition of directional changes, abrupt motions, and sustained shifts in vehicle dynamics—each of which is mapped within a consistent coordinate system for reliable tracking and assessment. By using these dynamic vectors, the system ensures accurate interpretation of driver behavior, including detection of high-risk driving events like hard braking, sharp turns, and rapid acceleration.

> *determining a mobile thing motion activity (MTMA) associated with the MT based upon the movement data.*

From the computed motion data, Knight-Swift's telematics-equipped dash cameras classify specific motion activities, such as hard braking, rapid acceleration, or potential collisions. These

classifications form the foundation for actionable insights, driver alerts, reporting mechanisms, and safety interventions. The system uses these classifications to generate real-time feedback, supporting improved driver behavior and fleet safety. This functionality aligns closely with the detection objectives outlined in BWE's patented technology, which also identifies and categorizes driver behaviors based on sensor-derived motion data.

**39.**

Claim 13 of the '558 Patent, for example, recites:

> *13. The method of claim 1, wherein one or more of the steps of the method is implemented in the WCD, in a computer system that is remote to the WCD, or in a combination of both.*

Knight-Swift's monitoring system operates through a distributed architecture that combines local, in-vehicle processing with remote server-based computing to assess driver behavior. Motion data is captured by onboard accelerometers, measuring acceleration along the *x*, *y*, and *z* axes. This data is transmitted wirelessly and may include either raw sensor readings—used to assess the severity of events such as hard braking, rapid acceleration, or collisions—or pre-processed classifications generated on the device through motion analysis algorithms. Whether raw or pre-classified, the data is further processed by Knight-Swift's remote computing infrastructure to support real-time notifications and behavioral analysis. The system reflects a hybrid implementation, where motion detection and initial classification may occur locally on the wireless communication device, while additional analytics and reporting are performed remotely. This operational structure is consistent with the scope of Claim 13, which allows for method steps to be executed locally, remotely, or in combination. Moreover, its robust integration capabilities allow fleets to harness such data through connected telematics systems, facilitating comprehensive driver behavior monitoring and real-time feedback. Eleos enables fleets to collect and process data

related to driver behaviors such as hard braking, rapid acceleration, and sharp cornering, further contributing to Knight-Swift's comprehensive behavior-tracking ecosystem.

**40.**

Claim 16 of the '558 Patent, for example, recites:

> *16. The system of claim 1, wherein the system is implemented in the WCD, in a computer system that is remote to the WCD, or in a combination of both.*

Knight-Swift's monitoring system operates through a distributed architecture that combines local, in-vehicle processing with remote server-based computing to assess driver behavior. Motion data is captured by onboard accelerometers, measuring acceleration along the *x*, *y*, and *z* axes. This data is transmitted wirelessly and may include either raw sensor readings—used to assess the severity of events such as hard braking, rapid acceleration, or collisions—or pre-processed classifications generated on the device through motion analysis algorithms. Whether raw or pre-classified, the data is further processed by Knight-Swift's remote computing infrastructure to support real-time notifications and behavioral analysis. The system reflects a hybrid implementation, where motion detection and initial classification may occur locally on the wireless communication device, while additional analytics and reporting are performed remotely. This operational structure is consistent with the scope of Claim 13, which allows for method steps to be executed locally, remotely, or in combination. Moreover, its robust integration capabilities allow fleets to harness such data through connected telematics systems, facilitating comprehensive driver behavior monitoring and real-time feedback. Eleos enables fleets to collect and process data related to driver behaviors such as hard braking, rapid acceleration, and sharp cornering, further contributing to Knight-Swift's comprehensive behavior-tracking ecosystem.

**41.**

Independent Claim 17 of the '558 Patent, shown in italics, recites:

> *17. A method, comprising: receiving first and second data from one or more sensors associated with a wireless communication device (WCD) transported by a mobile thing (MT), the first and second data indicative of movement of the WCD;*

Knight-Swift's telematics-equipped dash cam devices monitor and evaluate driver behaviors using advanced technology, including GPS and accelerometers. The devices capture and process 3D acceleration data along the *x*, *y*, *z* axes, enabling real-time detection and analysis of driving behaviors such as hard braking and rapid acceleration, and accident occurrences.

> *determining reference data that defines a reference framework from the first data;*

Knight-Swift's telematics-equipped dash cam devices determine driver behaviors by collecting a wide range of accelerometer data sample values from the devices. These updates are delivered in a structured data-object format, which contains detailed information about the device's accelerations, including gravity (g ≈ 9.81 m/s²). This first data establishes the gravity's influences, which are used to isolate and eliminate non-device movements, ensuring that the subsequent data comparisons are based solely on true motion activity. By filtering out gravitational influences, the system ensures that the analyzed data accurately reflects driver actions such as braking, acceleration, and turning, without interference from the vehicle's position or angle.

> *normalizing the second data with the reference data so that the second data can be analyzed in the reference framework; and*

Knight-Swift's telematics-equipped dash cameras for determining driver behaviors ensure accurate comparisons by creating reference data that neutralizes the influences of gravity. This important step enables the system to analyze and evaluate device movement data with precision, isolating the true motion activity of the vehicle. By removing the effects of gravitational forces, the system ensures that only relevant vehicle dynamics—such as hard braking and rapid

acceleration, and acceleration—are considered, providing accurate and reliable behavior classifications based on actual driver actions.

> *identifying a mobile thing motion activity (MTMA) associated with the MT based upon the normalized second data.*

Knight-Swift's telematics-equipped dash cameras determine driver behaviors by comparing the reference data that omits gravity (g ≈ 9.81 m/s²) data. The accelerometer data in Knight-Swift's system is processed to accurately determine driving behaviors such as hard braking and rapid acceleration. By neutralizing the gravitational influence, the system isolates true motion data, enabling precise classification of these critical driving events and ensuring reliable event detection and reporting.

**42.**

Claim 25 of the '558 Patent, for example, recites:

> *25. The method of claim 17, wherein one or more of the steps of the method is implemented in the WCD, in a computer system that is remote to the WCD, or in a combination of both.*

Knight-Swift's monitoring system operates through a distributed architecture that combines local, in-vehicle processing with remote server-based computing to assess driver behavior. Motion data is captured by onboard accelerometers, measuring acceleration along the *x*, *y*, and *z* axes. This data is transmitted wirelessly and may include either raw sensor readings—used to assess the severity of events such as hard braking, rapid acceleration, or collisions—or pre-processed classifications generated on the device through motion analysis algorithms. Whether raw or pre-classified, the data is further processed by Knight-Swift's remote computing infrastructure to support real-time notifications and behavioral analysis. The system reflects a hybrid implementation, where motion detection and initial classification may occur locally on the wireless communication device, while additional analytics and reporting are performed remotely. This

operational structure is consistent with the scope of Claim 13, which allows for method steps to be executed locally, remotely, or in combination. Moreover, its robust integration capabilities allow fleets to harness such data through connected telematics systems, facilitating comprehensive driver behavior monitoring and real-time feedback. Eleos enables fleets to collect and process data related to driver behaviors such as hard braking, rapid acceleration, and sharp cornering, further contributing to Knight-Swift's comprehensive behavior-tracking ecosystem.

**43.**

Independent Claim 27 of the '558 Patent, shown in italics, recites:

> *27. A method for implementation in a wireless communication device (WCD) that is designed to detect a plurality of mobile thing motion activities (MTMAs) associated with a mobile thing (MT), comprising:*

Knight-Swift's telematics-equipped Driveri camera systems are designed to detect and classify multiple types of motion activities associated with vehicles in transit. These devices incorporate wireless connectivity, GPS modules, and motion sensors—primarily accelerometers capable of capturing three-dimensional motion across the *x*, *y*, and *z* axes. This sensor array allows the system to monitor vehicle behavior in real-time, enabling the detection of a range of driving-related activities such as hard braking, sudden acceleration, and collisions.

> *receiving a plurality of data sample values from one or more sensors of the WCD that is transported by the MT, the data sample values indicative of movement of the WCD;*

Knight-Swift's telematics-equipped dash cameras receive a plurality of data sample values from embedded motion sensors, including three-axis accelerometers and gyroscopes. These data sample values are indicative of the movement of the vehicle (MT) as it is transported. The sensors continuously capture and transmit time-stamped motion data, reflecting changes in acceleration, velocity, and direction. This data is used to monitor the vehicle's movement in real-time, enabling the system to assess driving events and behaviors with a high degree of accuracy.

*computing reference data, the reference data defining a relationship between data sample values and a reference framework to enable comparison of data sample values; calculating movement data based upon the reference data and the data sample values; and*

The telematics-equipped dash cameras used by Knight-Swift process raw sensor input using internal reference frameworks to normalize the motion data. This normalization process often involves adjusting for gravitational constants (e.g., $g \approx 9.81$ m/s²) and compensating for vehicle orientation changes. By comparing the real-time sensor outputs to known reference baselines, the system calculates meaningful movement values, allowing for the detection of changes in motion magnitude and trajectory shifts. These calculations form the foundation for behavior classification, such as identifying aggressive driving behaviors, harsh braking, or rapid acceleration.

*determining an MTMA associated with the MT based upon the movement data.*

Using the movement data derived from accelerometer and related sensor inputs, Knight-Swift's telematics-equipped dash cameras identify and classify specific motion activities—such as harsh braking, sharp turning, rapid acceleration, or impact events. These mobile motion activities are used to support driver feedback, safety alerts, coaching tools, and backend risk evaluation systems. The detection and classification of these events align with the MTMA determination functionality described in Claim 27, enabling real-time monitoring and assessment of driving behavior for safety and performance improvements.

**44.**

Independent Claim 42 of the '558 Patent, shown in italics, recites:

*42. A system, comprising: one or more memories designed to store computer program code; one or more processors designed to execute the computer program code; and wherein the computer program code comprises:*

Knight-Swift's telematics-equipped dash cameras include onboard hardware systems composed of memory and processors configured to execute software code that supports behavior monitoring and motion analysis. These systems combine wireless communication capabilities, GPS positioning, and motion sensing components—primarily accelerometers and, in some cases, gyroscopes—to detect vehicle dynamics in three dimensions (*x*, *y*, *z*). The system's core function is to identify key driving behaviors such as hard braking and rapid acceleration using data generated by these onboard sensors.

> *code to receive first and second data from one or more sensors associated with a wireless communication device (WCD) transported by a mobile thing (MT), the first and second data indicative of movement of the WCD;*

The telematics-equipped dash cameras acquire sensor data streams from accelerometers and gyroscopes embedded in the in-vehicle wireless communication device (WCD). The system collects time-based motion data samples across the *x*, *y*, and *z* axes. The initial (first) data samples may include gravitational influence or represent an initial orientation of the device, providing a baseline. Subsequently, the system captures additional (second) motion data samples that are used to assess movement characteristics. These sets of data are compared and analyzed to detect and identify behavioral patterns, such as harsh braking or rapid acceleration, over defined time intervals.

> *code to determine reference data that defines a reference framework from the first data;*

The telematics-equipped dash camera software establishes a reference framework by processing the first set of data to determine factors such as gravitational influence and device orientation. This reference data serves as a baseline for interpreting subsequent motion data. By defining the device's orientation and compensating for gravitational forces, the system supports normalization

and alignment of motion data within a consistent coordinate system. This reference framework allows for accurate analysis of driver behaviors by comparing real-time data against the baseline.

> *code to normalize the second data with the reference data so that the second data can be analyzed in the reference framework; and*

The telematics-equipped dash cameras use the previously established reference framework to normalize the second data sample set. This ensures that motion events are analyzed relative to a known baseline, enabling accurate detection of deviations in acceleration or directional movement that may represent driver actions or safety events. By comparing the second data (which represents subsequent motion activity) against the normalized reference data, the system ensures that only relevant and accurate data is used for identifying specific behaviors, such as hard braking, rapid acceleration, or sharp turns.

> *code to identify a mobile thing motion activity (MTMA) associated with the MT based upon the normalized second data.*

After normalization, the telematics-equipped dash cameras execute classification logic to identify specific motion activities such as hard braking, sudden acceleration, sharp turns, or potential collisions. These determinations are made by comparing normalized motion data against stored event profiles. The system then uses this information to trigger driver alerts, update driver scorecards, or log safety-related events. This behavior closely aligns with the claimed functionality of identifying motion activities based on processed sensor inputs, ensuring precise detection and classification of driver behaviors in real time.

**45.**

Claim 50 of the ’558 Patent, for example, recites:

> *50. The system of claim 42, wherein the system is implemented in the WCD, in a computer system that is remote to the WCD, or in a combination of both.*

Knight-Swift's monitoring system operates through a distributed architecture that combines local, in-vehicle processing with remote server-based computing to assess driver behavior. Motion data is captured by onboard accelerometers, measuring acceleration along the *x*, *y*, and *z* axes. This data is transmitted wirelessly and may include either raw sensor readings—used to assess the severity of events such as hard braking, rapid acceleration, or collisions—or pre-processed classifications generated on the device through motion analysis algorithms. Whether raw or pre-classified, the data is further processed by Knight-Swift's remote computing infrastructure to support real-time notifications and behavioral analysis. The system reflects a hybrid implementation, where motion detection and initial classification may occur locally on the wireless communication device, while additional analytics and reporting are performed remotely. This operational structure is consistent with the scope of Claim 13, which allows for method steps to be executed locally, remotely, or in combination. Moreover, its robust integration capabilities allow fleets to harness such data through connected telematics systems, facilitating comprehensive driver behavior monitoring and real-time feedback. Eleos enables fleets to collect and process data related to driver behaviors such as hard braking, rapid acceleration, and sharp cornering, further contributing to Knight-Swift's comprehensive behavior-tracking ecosystem.

**46.**

Independent Claim 52 of the '558 Patent, shown in italics, recites:

> *52. A system for implementation in a wireless communication device (WCD) that is designed to detect a plurality of mobile thing motion activities (MTMAs) associated with a mobile thing (MT), comprising: one or more memories designed to store computer program code; one or more processors designed to execute the computer program code; and wherein the computer program code comprises:*

Knight-Swift's telematics-equipped dash cameras are installed in fleet vehicles. These devices utilize wireless communication, contain memory and processing units configured to execute

software code used for detecting motion activities associated with the host vehicle. The system leverages a combination of cellular communication, GPS, and motion sensors—specifically three-axis accelerometers—to capture and analyze movement across *x*, *y*, and *z* dimensions. These sensor inputs form the foundation for identifying driver behaviors such as hard braking and rapid acceleration, and collision-level impacts.

> *code to receive a plurality of data sample values from one or more sensors of the WCD that is transported by the MT, the data sample values indicative of movement of the WCD;*

The telematics-equipped dash cameras use software code that continuously receives data samples from integrated motion sensors. These data points are generated by accelerometers (and in some instances gyroscopes) and reflect the movement and orientation of the vehicle in real time. Each data sample is time-based and serves as an input to behavior detection algorithms. This functionality ensures that the system can monitor the vehicle's motion and detect driver behaviors such as hard braking and rapid acceleration in real time.

> *code to compute reference data, the reference data defining a relationship between data sample values and a reference framework to enable comparison of data sample values;*

Knight-Swift's telematics-equipped dash cameras reference data sets that represent baseline activity conditions—such as when the vehicle is stationary, idling, or traveling at a constant speed. This reference framework allows the system to compare new sensor readings to prior states, helping it detect transitions between driving and non-driving conditions and refine event recognition. By comparing current data with reference data, the system can accurately assess changes in the vehicle's movement patterns and classify events such as hard braking and rapid acceleration.

> *code to calculate movement data based upon the reference data and the data sample values; and*

Movement data is calculated by analyzing short-term motion activity relative to the established reference framework. The code processes sequential sensor data to detect changes in velocity, direction, and force—enabling the classification of acceleration, braking, and other movement patterns over defined time intervals. This approach ensures that the system can track and evaluate driving behaviors such as hard braking and rapid acceleration based on real-time sensor data and its relationship to the reference data.

> *code to determine an MTMA associated with the MT based upon the movement data.*

Using the calculated movement data, the dash cam software determines whether specific mobile motion activities (MTMAs) have occurred. These include hard braking and rapid acceleration. The system also flags videos where behaviors can be used in real-time alerts, driver coaching tools, backend reporting, and performance scoring systems. The system's ability to classify these motion activities based on real-time data allows for effective monitoring and management of driver behavior across the fleet.

**COUNT III**

**DIRECT INFRINGEMENT OF THE '951 PATENT**

**47.**

Plaintiff incorporates by reference the allegations of Paragraphs 1-18.

**48.**

Defendant has directly infringed and continues to directly infringe at least one or more claims of the '951 Patent, through, among other activities, using applications automatic programs for monitoring human activities while driving. On information and belief, Defendant's applications are provided, at least in part, as a dash-cam-deployed driver-behavior monitoring and reporting solution.

**49.**

Independent Claim 1 of the '951 Patent, shown in italics, recites:

> *1. A wireless communications device (WCD), comprising: one or more memories that store computer program code; and one or more processors that execute the computer program code, the computer program code comprising:*

The Knight-Swift telematics-equipped dash cameras for determining driver behaviors run on advanced wireless communications devices (WCDs) that include wireless connectivity, GPS, and three-axis accelerometers for motion detection. These devices comprise one or more memories that store computer program code, and one or more processors that execute the computer program code. The program code enables the device to interpret its movement and activities, and occasionally its surroundings, using the *x*, *y*, and *z*-axis data of a 3D coordinate system.

> *instructions to enter a first mode of operation involving a first investigation process with one or more sensors, the first investigation process capturing first data with the one or more sensors;*

The Knight-Swift telematics-equipped dash cameras utilize logic to monitor vehicle movement and determine various operating modes such as driving, idling, or accident detection. Upon activation, the system enters a first mode that begins capturing sensor data from the accelerometers and gyroscopes. This includes detecting hard braking and rapid acceleration. During this mode, the system collects real-time data such as location, velocity, and motion intensity.

> *instructions to determine whether or not the first data is indicative of an activity relating to a user need for assistance, an accident, or a crime; and*

Knight-Swift's telematics-equipped dash cameras include logic within code that evaluates sensor data to detect abnormal vehicle motion events. This includes assessing whether sensor patterns indicate potentially dangerous conditions such as sudden deceleration or erratic vehicle movement. The system uses this information to determine if the data indicates a potential accident, emergency, or driver safety concern.

> *instructions to, when the first data may involve the activity, enter into a second mode of operation involving a second investigation process that is different than the first investigation process and that involves the one or more sensors and/or one or more other sensors in order to capture second data that is further indicative of the activity.*

When a safety event such as hard braking or impact is detected, the Knight-Swift telematics-equipped dash cameras transitions to a second mode that expands data capture. This secondary investigation process collects more granular information using the same or additional sensors, including higher-frequency accelerometer sampling, location, and event duration. The goal is to build a fuller picture of the event, including before, during, and after conditions.

**50.**

Claim 8 of the '951 Patent, for example, recites:

> *8. The system of claim 1, wherein the computer program code further comprises: instructions to compare the first data and/or the second data with reference data; and instructions to detect an event in an environment associated with the WCD based upon the comparison.*

The Knight-Swift telematics-equipped dash cameras for determining driver behaviors increase detection accuracy by collecting multiple accelerometer samples over short time intervals. The system compares real-time motion data to internally established reference data that filters out gravitational influence and other baseline values. This comparison process isolates meaningful motion signatures from ambient data and enables the device to detect specific driving events—such as hard braking and rapid acceleration, or collisions—based on deviations from the reference framework.

**51.**

Claim 9 of the '951 Patent, for example, recites:

> *9. The system of claim 8, wherein the comparison is in the time domain, frequency domain, or both.*

The Knight-Swift telematics-equipped dash cameras for determining driver behaviors enhance motion detection accuracy by evaluating accelerometer data across both time and frequency domains. The system captures multiple short-term accelerometer samples and filters out gravitational influence to obtain clean axis data. This filtered data is then analyzed for changes in amplitude, frequency, or duration that correspond to specific driving behaviors. By using time domain comparisons (e.g., event duration) and frequency-domain assessments (e.g., pattern spikes or repetition), the system is able to more precisely detect events such as hard braking and rapid acceleration.

**52.**

Independent Claim 10 of the ’951 Patent, shown in italics, recites:

> *10. A wireless communications device (WCD), comprising: one or more memories that store computer program code; and one or more processors that execute the computer program code, the computer program code comprising:*

The Knight-Swift telematics-equipped dash cameras for determining driver behaviors operate through applications running on wireless communication-enabled computing devices, such as in-cab devices equipped with cellular connectivity, GPS, and three-axis accelerometers. These devices contain memory components that store the software code and processors that execute it in real time. The program code interprets motion and orientation using data from the *x*, *y*, and *z* axes of the accelerometer, enabling the system to recognize various driving activities and, in some cases, infer aspects of the vehicle’s surroundings. This configuration allows for continuous, sensor-based monitoring of driver behavior during vehicle operation.

> *instructions to produce data from one or more sensors associated with the WCD; instructions to determine a human body physical activity (HBPA) associated with a WCD user based upon the data;*

The Knight-Swift telematics-equipped dash cameras for determining driver behaviors rely on code that collects and processes sensor data—primarily from three-axis accelerometers—embedded in wireless communication devices. This data is used to detect distinct physical movement patterns associated with vehicle operation. Although originally intended for human body physical activity recognition, Knight-Swift's system similarly interprets motion data to identify behavior patterns such as hard braking, rapid acceleration, and collision events, which correspond to the physical activity of the driver within the vehicle. These determinations are made based on the frequency, intensity, and directional characteristics of the sensor input.

> *instructions to select a mode of operation from a set of modes, based upon the determined HBPA, the set including different modes of operation involving initiation of different investigation processes that capture different types of data; and*

Knight-Swift telematics-equipped dash cameras for determining driver behaviors system are equipped with intelligent operational modes to identify aggressive driving behavior such as hard braking and fast accelerations.

> *instructions to communicate the data to a remote computer system.*

The Knight-Swift telematics-equipped dash cameras for determining driver behaviors are equipped with adaptive operational modes that respond to identified motion patterns. When behaviors such as hard braking, rapid acceleration, or sudden deceleration are detected, the system selects the appropriate operational mode to initiate a targeted data capture process. These investigation modes may vary in sensitivity, data granularity, or sensor usage depending on the severity or context of the detected event. Once data is collected, including accelerometer readings, location, speed, and impact information, it is transmitted to Knight-Swift's remote computing infrastructure. There, the data is logged, analyzed, and used to support event-based alerts, performance scoring, and safety evaluations across the fleet.

**COUNT IV**

**DIRECT INFRINGEMENT OF THE ’914 PATENT**

**53.**

Plaintiff incorporates by reference the allegations of Paragraphs 1-18.

**54.**

Defendant has directly infringed and continues to directly infringe at least one or more claims of the ’914 Patent, through, among other activities, using applications automatic programs for monitoring human activities while driving. On information and belief, Defendant’s applications are provided, at least in part, as a dash-cam-deployed driver-behavior monitoring and reporting solution.

**55.**

Independent Claim 5 of the ’914 Patent, shown in italics, recites:

> *5. A system comprising: at least one computing device; and at least one application executable in the at least one computing device, the application comprising:*

Knight-Swift’s tracking system includes dash cam onboard computing devices—executing applications designed to monitor driver behavior and vehicle motion. These devices utilize three-axis accelerometers to track motion within a 3D coordinate system ($x$, $y$, $z$), allowing the detection and classification of driving activities such as braking intensity, rapid acceleration, and collision-level events.

> *logic that determines a user activity and/or user surroundings;*

Knight-Swift’s telematics-equipped dash cameras implement logic for identifying user activity by analyzing motion data patterns over time. By evaluating recurring motion signals, frequency spikes, and behavioral deviations, the system infers whether the driver is hard braking and rapid acceleration, or experiencing abnormal motion. This analysis provides insight into both the

driver's actions and the immediate surroundings influencing those actions, enabling real-time evaluation of driving behavior and performance.

> *logic that determines a surveillance mode that corresponds to the user activity and/or the user surroundings;*

Knight-Swift's telematics-equipped dash cameras continuously operates in a surveillance mode, dynamically adapting to the driver's current behavior and driving environment. When elevated risk behaviors are detected—such as sudden braking or lane deviation—the system increases monitoring sensitivity. This includes logging critical data points such as vehicle speed, direction, and acceleration severity to create a complete behavioral profile of the driver in context.

> *logic that facilitates a user-defined response to the user activity and/or the user surroundings; and*

Knight-Swift's telematics-equipped dash cameras use lights and/or sounds to inform drivers when certain events are detected—such as hard braking and rapid acceleration, or a potential collision. On-screen options to stop or change these notifications can be used by the driver. These prompts appear directly on the in-cab dash cam and also the mobile application, allowing the driver to save video recordings, acknowledge the alert, review the flagged event, or initiate a manual recording for further context. In certain situations, drivers may also respond directly to the fleet manager through pre-configured messaging tools within the device interface. This interactive functionality allows the driver to confirm awareness of the event, provide feedback, or escalate issues for follow-up, enabling a responsive and flexible safety environment tailored to user input.

> *logic that communicates surveillance information to at least one remotely located computer device.*

Captured event data—including motion activity, driving violations, and behavioral assessments—is transmitted to Knight-Swift's remote servers for additional analysis, logging, and integration

with the company's safety reporting systems. These remote systems compile driver performance data, issue notifications, and help inform coaching and compliance measures across the fleet.

**56.**

Independent Claim 15 of the '914 Patent, shown in italics, recites:

> *15. A method comprising the steps of: determining, by a computing device, a user activity and/or user surroundings;*

Knight-Swift's telematics-equipped dash cameras, deployed in fleet vehicles and utilizing three-axis accelerometers, detect and interpret motion patterns. By capturing movement data in *x*, *y*, and *z* axes, the system can determine user activities such as hard braking and rapid acceleration, and impact events. These inputs help establish the behavioral context and physical environment surrounding the vehicle and driver.

> *determining, by the computing device, a surveillance mode that corresponds to the user activity and/or the user surroundings;*

Knight-Swift's telematics-equipped dash cameras operate in an adaptive surveillance mode, dynamically adjusting based on vehicle conditions and sensor inputs. For example, if sudden deceleration is detected, the system may flag the event as a potential accident and intensify data collection. The surveillance mode actively logs critical information such as vehicle speed, directional changes, and impact severity. The system captures and analyzes sensor data before, during, and after motion-related incidents, ensuring situational awareness and contextual accuracy for every event.

> *facilitating, by the computing device, a user-defined response to the user activity and/or the user surroundings; and*

Knight-Swift's telematics-equipped dash cameras use lights and/or sounds to inform drivers when certain events are detected—such as hard braking and rapid acceleration, or a potential collision. On-screen options are available for the driver to stop or change these notifications. These prompts

appear directly on the in-cab dash cam and the mobile application, allowing the driver to save video recordings, acknowledge the alert, review the flagged event, or initiate a manual recording for further context. In certain situations, drivers can also respond directly to the fleet manager through pre-configured messaging tools within the device interface. This interactive functionality allows the driver to confirm awareness of the event, provide feedback, or escalate issues for follow-up, enabling a responsive and flexible safety environment tailored to user input.

> *communicating, by the computing device, surveillance information to at least one remotely located computer device.*

Captured event data—ranging from motion classifications to raw sensor inputs—is transmitted to Knight-Swift's backend systems, where it is logged, analyzed, and incorporated into broader driver performance assessments. Fleet managers are notified in near real-time, enabling rapid intervention, coaching, or verification of incidents. These remote computing systems serve as a centralized location for safety scoring, report generation, and risk management activities across the entire fleet.

## COUNT V

## DIRECT INFRINGEMENT OF THE '273 PATENT

**57.**

Plaintiff incorporates by reference the allegations of Paragraphs 1-18.

**58.**

Defendant has directly infringed and continues to directly infringe at least one or more claims of the '273 Patent, through, among other activities, using applications automatic programs for monitoring human activities while driving. On information and belief, Defendant's applications are provided, at least in part, as a dash-cam-deployed driver-behavior monitoring and reporting solution.

**59.**

Independent Claim 22 of the '273 Patent, shown in italics, recites:

> *22. A method, comprising: receiving a time value and three streams of data sample values from an accelerometer of a wireless communication device (WCD) that is transported by a mobile thing (MT), each data sample value indicative of an acceleration of the WCD along an axis of a three dimensional (3D) coordinate system at a corresponding time value;*

Knight-Swift's telematics-equipped dash cameras for determining driver behaviors are part of a tracking system utilizing a 3-axis accelerometer for motion detection. These devices employ advanced computing processes, enabling the use of cellular networks, GPS for location and speed tracking, and accelerometers for measuring 3D accelerations and movements. The accelerometer is instrumental in determining the device's orientation and gravity accelerations across *x*, *y*, and *z* axes in a 3D coordinate system along with respective time values.

> *computing reference data, the reference data defining a relationship between data sample values and a reference framework to enable comparison of 3D sets of data sample values;*

Knight-Swift's telematics-equipped dash cameras for determining driver behaviors use reference data, such as data that represents accurate identification of driving movements by accelerometer *x*, *y*, and *z* axis sensor data. The reference data is created to remove and/or identify non-movement activities, such as gravity accelerations (that are not part of the device movements), and processed into classifications such as driving, harsh braking, harsh accelerations, and others over time periods. This ensures that the system can confirm changes and validate motion activity accurately based on real-world driving behavior.

> *calculating movement data for each set based upon the reference data; and*

Knight-Swift's telematics-equipped dash cameras for determining driver behaviors calculate movement data from classifications, objects, and/or raw accelerometer data (the live data). This data is processed with classifications, objects, and/or thresholds, including time, peaks, ranges,

frequencies, and/or averages. This enables the system to detect and assess specific driving behaviors such as harsh braking, rapid acceleration, and sharp turns based on real-time data inputs. The system applies these calculated movement values to generate accurate driver behavior assessments and deliver feedback.

> *determining a moving thing motion activity (MTMA) associated with the MT based upon the movement data.*

Knight-Swift telematics-equipped dash cameras for determining driver behaviors identify motion activity by normalizing the live data with the reference data over time periods. This process ensures that the system can accurately confirm activity changes, eliminating random false positives that could occur from brief, irrelevant sensor data readings (e.g., -1 second movements). By comparing the normalized data with the reference framework, the system can accurately detect motion activities such as harsh braking and rapid acceleration—key driver behaviors for safety evaluation.

## PRAYER FOR RELIEF

WHEREFORE, Plaintiff prays for relief that the Court enter judgment in their favor and against the Defendant, granting the following relief:

That the Court enter judgment that one or more claims of the ’846 Patent have been infringed either literally and/or under the doctrine of equivalents, by Defendant;

That the Court enter judgment that one or more claims of the ’558 Patent have been infringed either literally and/or under the doctrine of equivalents, by Defendant;

That the Court enter judgment that one or more claims of the’951 Patent have been infringed either literally and/or under the doctrine of equivalents, by Defendant;

That the Court enter judgment that one or more claims of the ’914 Patent have been infringed either literally and/or under the doctrine of equivalents, by Defendant;

That the Court enter judgment that one or more claims of the '273 Patent have been infringed either literally and/or under the doctrine of equivalents, by Defendant;

That Defendant be ordered to pay damages adequate to compensate Plaintiff for its acts of infringement, pursuant to 35 U.S.C. § 284;

That Plaintiff be awarded increased damages under 35 U.S.C. § 284 due to Defendant's willful infringement of the '846, '558,'951, '914, and '273 Patents;

That the Court find that this case is exceptional and award Plaintiff reasonable attorneys' fees pursuant to 35 U.S.C. § 285;

That Defendant, its officers, agents, employees, and those acting in privity with it, be preliminarily enjoined from further infringement, contributory infringement, and/or inducing infringement of the patent-in-suit, pursuant to 35 U.S.C. § 283;

That Defendant, its officers, agents, employees, and those acting in privity with it, be permanently enjoined from further infringement, contributory infringement, and/or inducing infringement of the patent-in-suit, pursuant to 35 U.S.C. § 283;

That Defendant be ordered to pay prejudgment and post-judgment interest;

That Defendant be ordered to pay all costs associated with this action; and

That Plaintiff be granted such other and additional relief as the Court deems just, equitable, and proper.

**DEMAND FOR JURY TRIAL**

Pursuant to Fed. R. Civ. P. 38(b), Plaintiffs demands a jury trial on all issues justiciable by a jury.

Respectfully Submitted,

Dated: June 18, 2025

/s/ Brett Thomas Cooke

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